

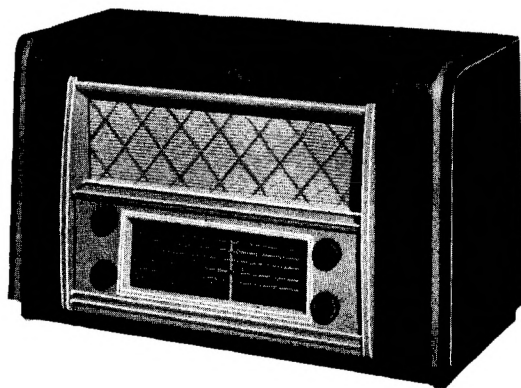
TECHNICAL INFORMATION AND SERVICE DATA

A.W.A. RADIOLA Model 558-TC

FIVE VALVE, TWO BAND, BATTERY/VIBRATOR
OPERATED SUPERHETERODYNE

ISSUED BY:

AMALGAMATED WIRELESS (AUSTRALASIA) LTD.



ELECTRICAL SPECIFICATIONS

Frequency Ranges:

Medium Wave 540-1,600 Kc/s.
(555-187.5 Metres)

Short Wave 6-18 Mc/s.
(50-16 Metres)

Intermediate Frequency 455 Kc/s.

Battery Complement:

2 — 45 volt "B" Batteries	}	Cable No. 19801
1 — 1.5 volt "A" Battery		
1 — 3 volt Cycle Lamp battery for Dial illumination.		

Vibrator Power Unit Operation:

Unit No. 19190: 1 — 4 volt accumulator.
Unit No. 22770: 1 — 6 volt accumulator.

Battery Consumption:

1.5 volt "A" Battery, 0.3 Amp.
90 volts "B" Battery, 16 mA "FULL".
9 mA "SAVE".
4 volt vibrator operation, 0.8 Amp.
6 volt vibrator operation, 0.7 Amp.

Dial Lamps:

2.5 volt, 0.25 Amp. M.E.S.

Fuses:

Battery Operation, 1/4-3/8 Amp.
Vibrator Operation, 3 Amp.

Valve Complement:

- (1) 1T4 — R.F. Amplifier.
- (2) 1R5 — Converter.
- (3) 1T4 — I.F. Amplifier.
- (4) 1S5 — Detector, A.F. Amplifier, A.V.C.
- (5) 3V4 — Output.

Vibrator Cartridge:

4 volt operation, V6E04.
6 volt operation, V5211.

Loudspeaker (Permanent Magnet):

9" x 6" Part No. 21515.
Transformer XA20.
V.C. Impedance 3 ohms at 400 C.P.S.

Undistorted Power Output:

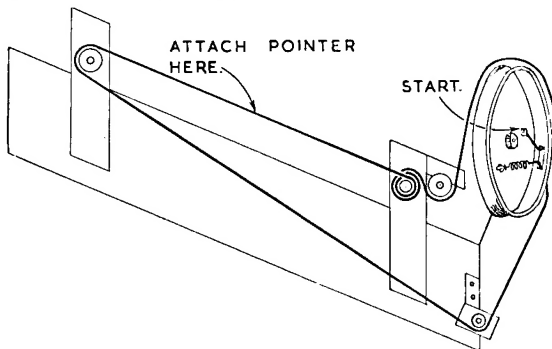
200 milliwatts.

Chassis Removal:

First remove the control knobs by pulling them straight off their spindles.

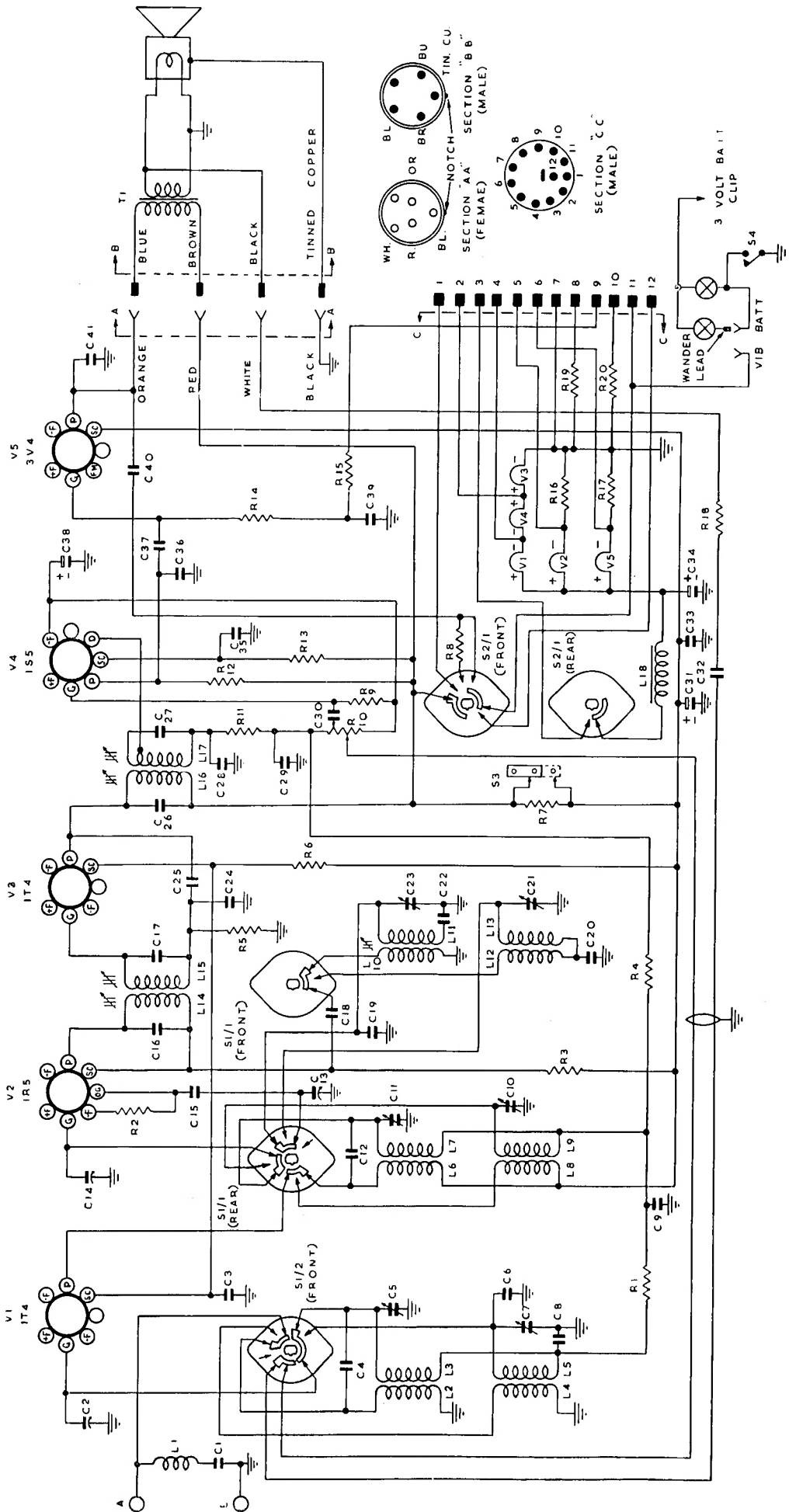
Then disconnect the Loudspeaker cable and Battery or Vibrator plug.

The chassis is held in the cabinet by four screws through the base of the cabinet. Removal of these enables the cabinet to be withdrawn.



Drive Cord Replacement:

The accompanying diagram shows the route of the cord and the method of attachment.



ALIGNMENT PROCEDURE

Manufacturer's Setting of Adjustments:

The receiver is tested by the manufacturer with precision instruments and all adjusting screws are sealed. Re-alignment should be necessary only when components in tuned circuits are repaired or replaced, or when it is found that the seals over the adjusting screws have been broken.

It is especially important that the adjustments should not be altered unless in association with the correct testing instruments listed below.

Under no circumstances should the plates of the ganged tuning capacitor be bent, as the unit is accurately aligned during manufacture and cannot be re-adjusted unless by skilled operators using special equipment.

For all alignment operations, connect the low side of the signal generator to the receiver chassis and keep the generator output as low as possible to avoid A.V.C. action. Also, keep the volume control in the maximum clockwise position.

Testing Instruments:

(1) A.W.A. Junior Signal Generator, type 2R7003 or,

(2) A.W.A. Modulated Oscillator, series J6726.

If the modulated oscillator is used, connect a 0.25 megohm non-inductive resistor across the output terminals, and for short wave alignment an additional 400 ohms non-inductive resistor in series with the "high" output lead of the instrument.

(3) A.W.A. Output Meter, type 2M8832.

ALIGNMENT TABLE

Order	Connect "high" side of Generator to:	Tune Generator to:	Tune Receiver Dial to:	Adjust for maximum peak output:
1	R.F. Section of Gang (Centre Section)	455 Kc/s.	540 Kc/s. (4QL)	L17 Core.
2	R.F. Section of Gang (Centre Section)	455 Kc/s.	540 Kc/s. (4QL)	L16 Core.
3	R.F. Section of Gang (Centre Section)	455 Kc/s.	540 Kc/s. (4QL)	L15 Core.
4	R.F. Section of Gang (Centre Section)	455 Kc/s.	540 Kc/s. (4QL)	L14 Core.
Repeat the above adjustments until the maximum output is obtained.				
5	Aerial Terminal	600 Kc/s.	600 Kc/s. (7ZL)	Osc. Core Adj. (L11)*
6	Aerial Terminal	1500 Kc/s.	1500 Kc/s. (3AK)	Osc. Adj. (C23)
7	Aerial Terminal	1500 Kc/s.	1500 Kc/s. (3AK)	R.F. Adj. (C11)
8	Aerial Terminal	1500 Kc/s.	1500 Kc/s. (3AK)	Aer. Adj. (C5)
Repeat adjustments 5, 6, 7, and 8.				
9	Aerial Terminal	16 Mc/s.	16 Mc/s.	Osc. Adj. (C21)†
10	Aerial Terminal	16 Mc/s.	16 Mc/s.	R.F. Adj. (C10)‡
11	Aerial Terminal	16 Mc/s.	16 Mc/s.	Aer. Adj. (C7)‡

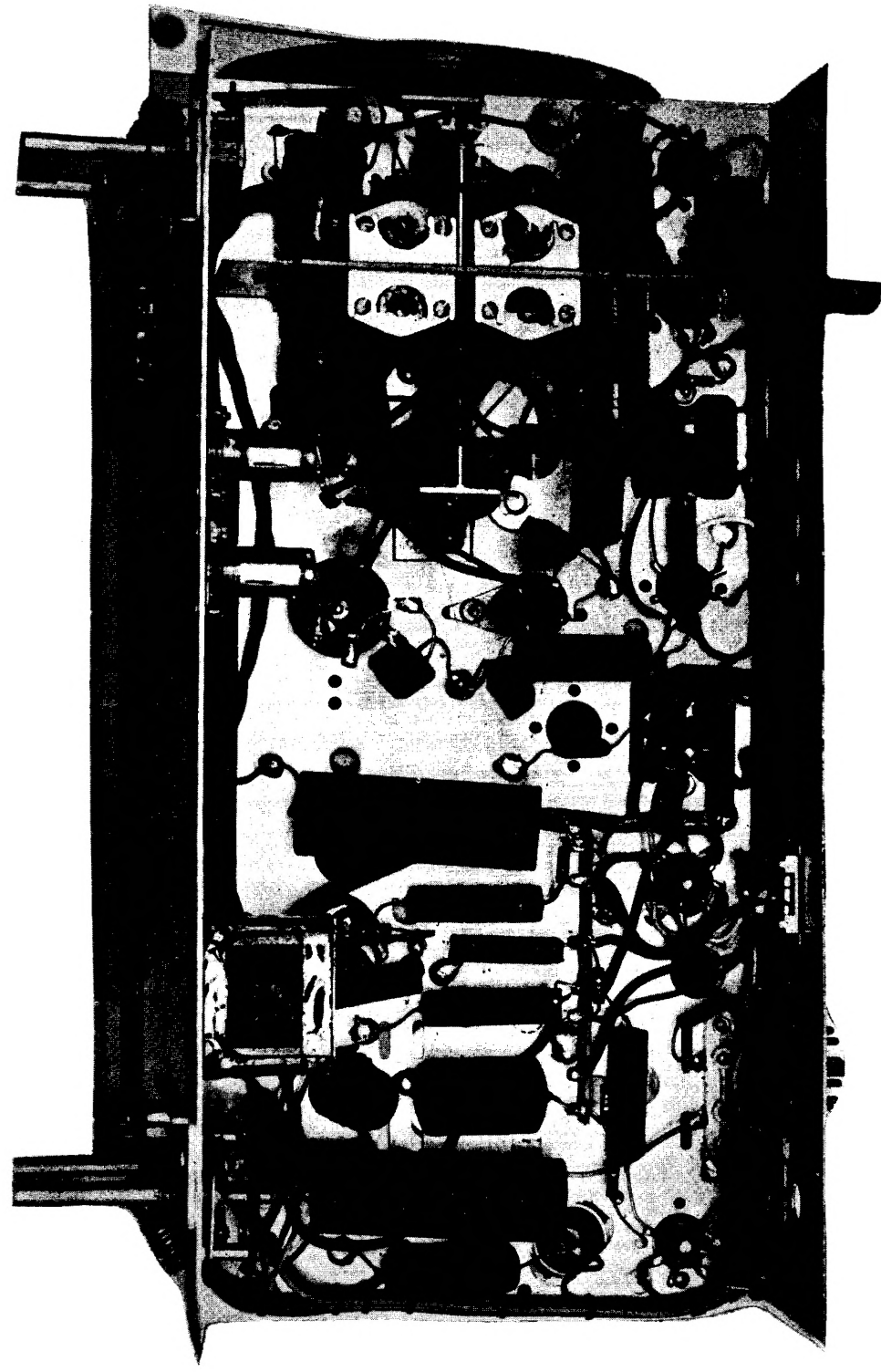
* Rock the tuning control back and forth through the signal.

† Use minimum capacity peak if two can be obtained. Check to determine that C21 has been adjusted to correct peak by tuning the receiver to approximately 15.09 Mc/s. where a weaker signal should be received.

‡ Use maximum capacity peak if two can be obtained.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

A B C D E F G H I J K L M



A B C D E F G H I J K L M

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

FIG.2.

CIRCUIT CODE — RADIO LA 558-TC

Code No.	Description	Part. No. Fig. No.	Location	Code No.	Description	Part. No. Fig. No.	Location
INDUCTORS							
L1	Filter Unit (including C1)	9382	L15	C11	2-20 μ F air trimmer	19659	F14
L2, L3	Aerial Coil 540-1600 Kc/s	15454	J16	C12	6.8 μ F ceramic		D13
L4, L5	Aerial Coil 6-18 Mc/s	15456	E16	C13	12-430 μ F tuning	18321	G7
L6, L7	R.F. Coil 540-1600 Kc/s	23891	E13	C14	12-430 μ F tuning	18321	G5
L8, L9	R.F. Coil 6-18 Mc/s	26060	J13	C15	47 μ F moulded mica		G13
L10, L11	Oscillators Coil 540-1600 Kc/s	3206A	H10	C16	100 μ F silvered mica (in 1st I.F.)		K12
L12, L13	Oscillators Coil 6-18 Mc/s	32484	E10	C17	100 μ F silvered mica (in 1st I.F.)		K12
L14, L15	1st I.F. Transformer	32700	J6	C18	0.05 μ F paper 200V working		J12
L16, L17	2nd I.F. Transformer	22703	J10	C19	9 μ F mica		H11
L18	Filament Choke	26866	D6	C20	4,000 μ F \pm 2 1/2% padder		F10
RESISTORS							
R1	0.1 megohm		E13	C21	2-20 μ F air trimmer	19659	D11
R2	0.1 megohm		K14	C22	490 μ F \pm 2 1/2% padder		G10
R3	10,000 ohms		K12	C23	2-20 μ F air trimmer	19659	D13
R4	2.7 megohms		J10	C24	0.02 μ F paper 600V working		J12
R5	2.7 megohms		K13	C25	9 μ F mica		K10
R6	40,000 ohms		K11	C26	100 μ F silvered mica (in 2nd I.F.)		K9
R7	10,000 ohms		L6	C27	100 μ F silvered mica (in 2nd I.F.)		K9
R8	10,000 ohms		D4	C28	100 μ F mica		H9
R9	10.0 megohms		H7	C29	100 μ F mica		K8
R10	0.5 megohms Volume Control (tapped 40,000 ohms)	26890	C16	C30	0.01 μ F paper 600V working		G7
R11	22,000 ohms		J9	C31	20 μ F 200 P.V. electrolytic		E5
R12	0.68 megohms		H6	C32	0.01 μ F paper 600V working		F2
R13	3.3 megohms		H5	C33	0.1 μ F paper 200V working		F3
R14	0.47 megohms		J3	C34	400 μ F 12 P.V. Electrolytic		G5
R15	0.47 megohms		J4	C35	0.05 μ F paper 200V working		G6
R16	50 ohms		L4	C36	200 μ F mica		J4
R17	25 ohms		L4	C37	0.05 μ F paper 200V working		F8
R18	0.27 megohms		E6	C38	400 μ F 12 P.V. Electrolytic		G4
R19	330 ohms		L5	C39	0.4 μ F paper 200V working		D3
R20	330 ohms		L5	C40	0.05 μ F paper 200V working		K3
CAPACITORS							
C1	47 μ F Mica		K16	C41	0.0025 μ F paper 600V working		
C2	12-430 μ F tuning	18321	G3	TRANSFORMERS			
C3	0.1 μ F paper 200V working		H10	T1	Loudspeaker Transformer	XA20	
C4	6.8 μ F ceramic		J17		LOUDSPEAKER		
C5	2-20 μ F air trimmer	19659	H15		9" x 6" Permanent Magnet	21515	
C6	14 μ F mica		E16	SWITCHES			
C7	2-20 μ F air trimmer	19659	F16	S1	Range Switch	27094	G16
C8	0.05 μ F paper 200V working		J16	S2	Battery-Tone Switch	33070	D3
C9	0.05 μ F paper 200V working		F14	S3	Battery-Save Switch	22775	L7
C10	2-20 μ F air trimmer	19659	H14	S4	Pilot Lamp Switch (on Tuning Spindle)	33071	D4
					VIBRATOR POWER UNIT		
					6 Volt Power Unit	22770	
					4 Volt Power Unit	19190	

REPLACEMENT PARTS

Cabinet	28116
Dial Scale	32217
Knob Assembly	26516
Knob Assembly, Range & Battery/Tone	26519
Lamp Holder	31804
Plug, 12 pin	17757
Pointer	33048
Socket 7 pin Valve	19965
7 pin Valve (floating)	23274
Spring, drive	1741

D.C. RESISTANCE OF WINDINGS

Winding	D.C. Resistance In ohms
Aerial Coil (M.W.)	
Primary (L2)	12
Secondary (L3)	5
Aerial Coil (S.W.):	
Primary (L4)	3
Secondary (L5)	*
R.F. Coil (M.W.):	
Primary (L6)	40
Secondary (L7)	5
R.F. Coil (S.W.):	
Primary (L8)	*
Secondary (L9)	*
Oscillator Coil (M.W.):	
Primary (L10)	1.5
Secondary (L11)	6
Oscillator Coil (S.W.):	
Primary (L12)	*
Secondary (L13)	*
I.F. Filter (L1)	17.5†
L.T. Choke (L18)	*
1st I.F. Transformer Windings	10
2nd I.F. Transformer Windings	7.5
Smoothing Choke (L75)	200
R.F. Filter Chokes (L73, L74)	*
R.F. Filter Chokes (L71, L72)	9
Loudspeaker Input Transformer (T1):	
Primary	500
Secondary	*
Vibrator Transformer (T71):	
17568 Primary	*
17568 Secondary	300
17892 Primary	*
17892 Secondary	150

The above readings were taken on a standard chassis, but substitution of materials during manufacture may cause variations and it should not be assumed that a component is faulty if a slightly different reading is obtained.

* Less than 1 ohm.

† In some receivers this reading may be as high as 60 ohms.

SOCKET VOLTAGES

VALVE			Bias Volts:		Screen to Chassis Volts:		Anode to Chassis Volts:		Anode Current mA:		Filament Volts:
			B	V	B	V	B	V	B	V	
1T4	R.F. Amp.	F§	—	—	47*	47*	90	90	1.3	1.3	1.3—1.4
		S			25*		48*		0.7		
1R5	Converter	F	—	—	59*	59*	59*	59*	0.9	0.9	1.3—1.4
		S			34*		34*		0.4		
1T4	I.F. Amp.	F	—	—	47*	47*	90	90	1.7	1.7	1.3—1.4
		S			25*		90		1.0		
1S5	Det., A.F. Amp. A.V.C.	F	—	—	24†	24†	27†	27†	0.1	0.1	1.3—1.4
		S			24†		27†		0.1		
3V4	Output	F	-4.5	-4.5	90	90	86	86	6.3	6.3	1.3—1.4
		S	-2.5		48		88		3.8		

* These readings may vary depending on the resistance of the voltmeter used.

† Calculated from measured current. An ordinary voltmeter will register a lower value.

§ F = "Full" position of Battery/Saving Switch.

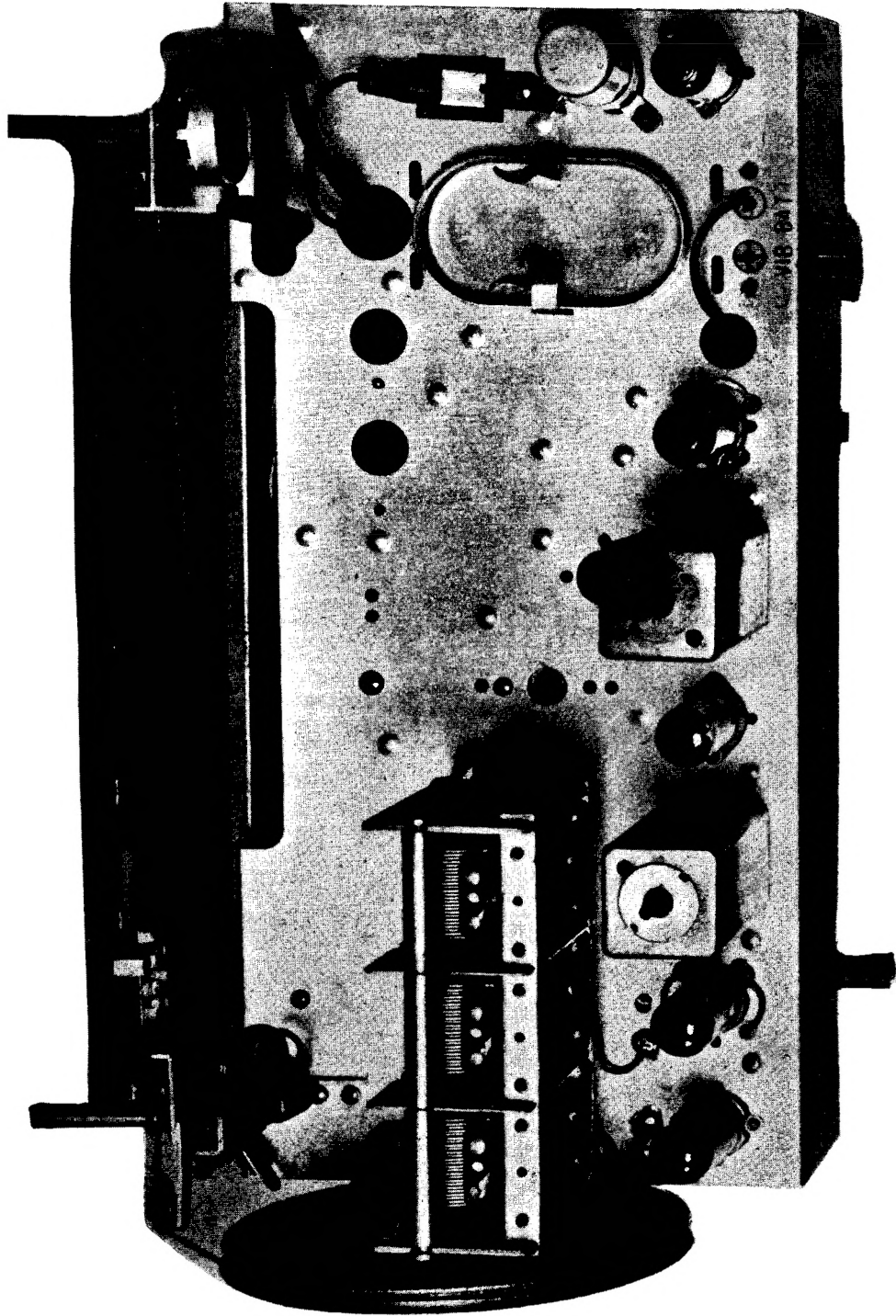
S = "Save" position of Battery/Saving Switch.

NOTE:—Battery Saving should not be used on vibrator operation.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

A B C D E F G H I J K L M

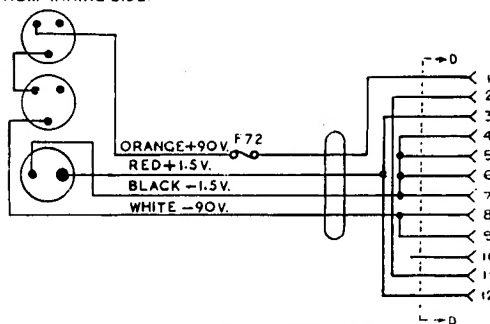
A B C D E F G H I J K L M



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

FIG. 1.

PLUGS VIEWED
FROM WIRING SIDE

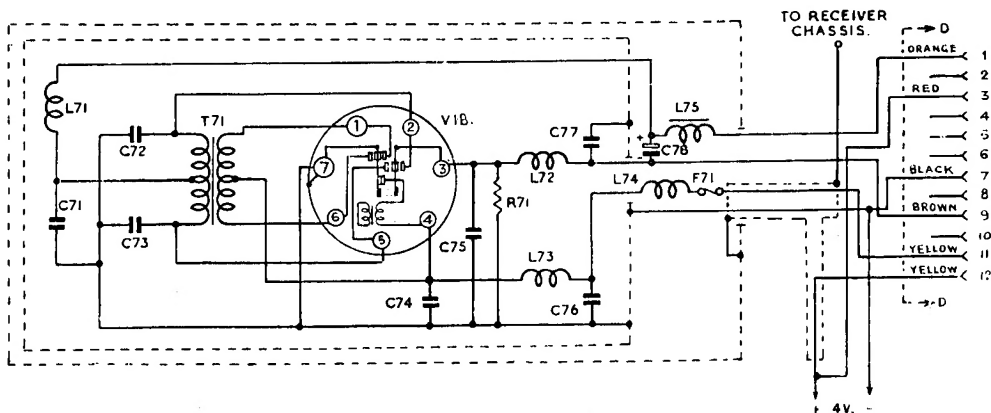


BATTERY CABLE
No.198Q1

VIBRATOR POWER UNITS 19190, 22770 — CIRCUIT CODE.

Code No.	Description	Part No.	Code No.	Description	Part No.	Code No.	Description	Part No.
INDUCTORS				CAPACITORS				
L71	R.F. Choke	13809	C72	0.02 μ F Paper, 600v. working	C78	20 μ F 200, P.V. Electrolytic		
L72	R.F. Choke	13809	C73	0.02 μ F Paper, 600v. working	C79	0.1 μ F Paper, 200v. working (22770 only)		
L73	R.F. Choke	3149	C74	0.1 μ F Paper, 400v. working	TRANSFORMERS			
L74	R.F. Choke	3149	C75	0.01 μ F Paper, 600v. working	T71	Vibrator Transformer (19190)		17568
L75	L.F. Choke	8321	C76	0.1 μ F Paper, 400v. working		Vibrator Cartridge (19190)		17892
RESISTORS				C77	0.01 μ F Paper, 600v. working		Vibrator Cartridge (22770)	V5211
R71	150 ohms, 1 watt (wire-wound)							
R72	12 ohms, \pm 5%, 1 watt (22770 only)							
C71	0.01 μ F Paper, 600v. working							

VIBRATOR POWER UNIT No.19190



6 VOLT VIBRATOR POWER UNIT NO.22770

